

THE HISTORY AND LOSS OF THE LEWES WAVE,  
*SCOPULA IMMORATA* L. (LEP.: GEOMETRIDAE)

By COLIN PRATT\*

*Scopula immorata* has a fairly wide distribution in Europe but has only been unquestionably recorded from one area in Britain — the north-western section of the Vert Wood complex, near Laughton, East Sussex. The moth has a tragic history in this country and is now presumed extinct.

Several brief historical accounts of the Lewes Wave have been published (Barrett, 1902; Haggett, 1981; Pratt, 1981). The moth was first publicly taken on June 27th 1887 by C.H. Morris who captured two specimens, a male and a female, flying over "heathy ground". Morris took the specimens to the local authority on Lepidoptera, J.H.A. Jenner of Lewis, who initially thought they were examples of *Ematurga atomaria* L. Later, with the help of Messrs. Waterhouse and Kirby, the moths were correctly identified as *immorata* (Jenner, 1887). Within a few months it transpired that a Mr Hopley had almost certainly taken the species at Laughton previously, and that a specimen had lain unidentified within the collection of a Mr Desvignes for at least 30 years, possibly longer. Curiously, this specimen had been exhibited by S. Stephens at a meeting of the Entomological Society of London in 1868 as a variety of *Semiothisa clathrata* L. (South, 1939).

For many years the locality was kept a closely guarded secret, and, although Morris and others collected the moth every year, the species became uncreasingly numerous. Its heyday, at least after its public discovery, was between the two world wars when *immorata* was often a very common insect — in 1925 considerable numbers were reported — but this abundance was never subsequently equalled. The moth was last seen plentifully in 1940 but so irregular did sightings become after the Second World War had ended that the insect was sometimes thought extinct; nevertheless, at least five individuals were noted in 1953 and several were seen in 1954 and 1956 but only singletons were reported after that latter season. The last specimen of the Lewes Wave was seen, but not taken, by A.J. Wightman on June 22nd 1961.

Apparently never taken at light, specimens were seen during daylight, usually in afternoon sunshine, when they could be disturbed from heather and bracken. The moth was usually found from the second week of June until mid July, although it was occasionally taken in late May. Double-brooded on the continent, in this country *immorata* was only occasionally so with a partial second brood after advantageous weather during August and September; during the hot summer of 1906 F.C. Woodbridge bred 40 larvae outside, two of which fed up quickly to

yield adults in mid September (Woodbridge, 1906) and H. Worsley-Wood took or bred a specimen on October 10th 1913 (Richards collection, Haslemere Museum).

Some mystery surrounds the identity of the larval foodplant in this country as the early stages of *immorata* were never found in the wild. Some time ago in Europe larvae were discovered on thyme and marjoram, and reared on *Clary* spp., but none of these plants have ever been reported from Laughton's woods — an area botanically well-worked (Wolley-Dod, 1937; Hall, 1980).

Heather has often been quoted as the insects' foodplant here, following a categorical statement made at the time of its discovery by Jenner (Jenner, 1887); certainly the plant was always dominant wherever the moth flew — indeed, it was waist high in some parts — but larvae should have been discovered subsequently if this were the case. Larvae have been successfully reared in captivity on the ubiquitous knotgrass and plantain in this country and it is likely that in the wild "low plants" were eaten, as was suggested almost a century ago (Kirby, 1889), and recently confirmed from European experience (Skou, 1986).

It is not known why *immorata* only occurred at Vert Wood but it is thought to be "the ecological site complex rather than food" (Haggett, 1981). The area is situated on Weald Clay and Tunbridge Wells Sand and the insect flourished where these met; here the "sands provide a loose, dry soil given over largely to heath-land and conifers and, where there is an admixture of clay, a fertile loam soil is formed" (Wolley-Dod, 1937). There are a number of apparently similar heathy sites in Sussex but none suitable on an interface between these two soils.

### Localities

Since its discovery, the moth was probably established in at least three places within the Vert Wood complex. The strongest colony, and the most well-known, was situated east of the Devil's Race where the Sussex Trust for Nature Conservation eventually established a reserve for the species — at TQ 510149. The Devil's Race was a section of ancient cattle track which laid between Halland House and Laughton Place and was so named after the nocturnal pursuit of a terrified medieval traveller by a red and flaming spectre (Pearson, 1931).

During the 1950s the insect was also seen flying over heather south of the reserve, both sides of the tarmac road leading south-westwards towards the Decca navigational radio beacon mast. An early but little known spot was an acre of heath probably situated in the southernmost part of the then remaining open area to the west of Sandpit Wood, at TQ 510142; this colony was lost when the land was first farmed at the end of the Second World War.

There is no satisfactory evidence that *immorata* ever occurred away from the Vert Wood complex within entomological historical times, although claims have been made. On about July 1st, 1908, R.E. James

was collecting moths in the Hailsham district and “was scouring the country on a bicycle in search of *Acidalia immorata*, which species I eventually discovered in rather small numbers. I think it quite possible that my locality may be a fresh one and not the recognised one (which I do not know), as I took them whilst trespassing on some private ground of sufficiently alluring aspect to tempt me inside. *Argynnis adippe* and belated *Brenthis selene* occurred on the same spot” (James, 1908). Apparently on the same day he visited Lewes. Of the two viable routes from Hailsham to Lewes the northernmost would bring a cyclist past the southern edge of Vert Wood; furthermore, the wood was the best in the county, at that time, for *adippe*.

In the mid 1920s A.J. Wightman categorically stated that “*immorata* is not confined in Britain to one spot, although it seems to be confined to a single district” (Wightman, 1924). In more recent times the species has been erroneously reported from Abbot’s Wood (Haes, 1977) and there is also earlier coincidence with the area. In the A.E. Tonge collection housed in the Booth Museum of Natural History at Brighton there are 43 variable specimens of *immorata*. All are in perfect condition with one exception — a specimen labelled “Eastbourne 30/6/20” is badly chipped. Investigation has shown that the specimen was given to Tonge by E.P. Sharpe who lived at Eastbourne and rarely sortied far for his moths. Yet if this imperfect example came from the same locality as the 42 perfect accompanying specimens, why was it kept?

### The Environment

The reason for the extinction of the Lewes Wave moth was the loss of suitable habitat — the causes being twofold; changes in centuries old woodland practises stopped the cycle which had kept heathy areas open and, even more important, almost all of its habitat was physically lost to forestry and agriculture. Laughton was first mentioned in the Domesday Book under Leston, a name derived from the words “lese” and “tun”; this lese near Ringmer was “a natural forest glade, which had for centuries been kept open by the constant grazing of wild cattle and other animals of the forest” (Pearson, 1931) and the tun a palisaded settlement, probably built by the Vikings, to keep out bears and wolves. It is known that some clearance of wood and heathland took place in the Laughton area between circa 650 and 800 AD, “by fire and axe” (Moore, 1965), but the land where *immorata* flew in historical times was to lay virtually unchanged for a thousand years. From 1086 until the end of the 18th century the Laughton area has been described as “a vast expanse of common waste, thickly wooded, no doubt, in the centre, but probably thinning out into heath or scrubby underwood” (*loc. cit.*). In the 13th century monks had the right to take wood for domestic fuel and hedges, timber for monastery repairs, and pasturage for 100 pigs; cattle also wandered the site keeping it in “an open unwooded condition by intensive grazing” (*loc. cit.*). Later, “the extensive park, abounding

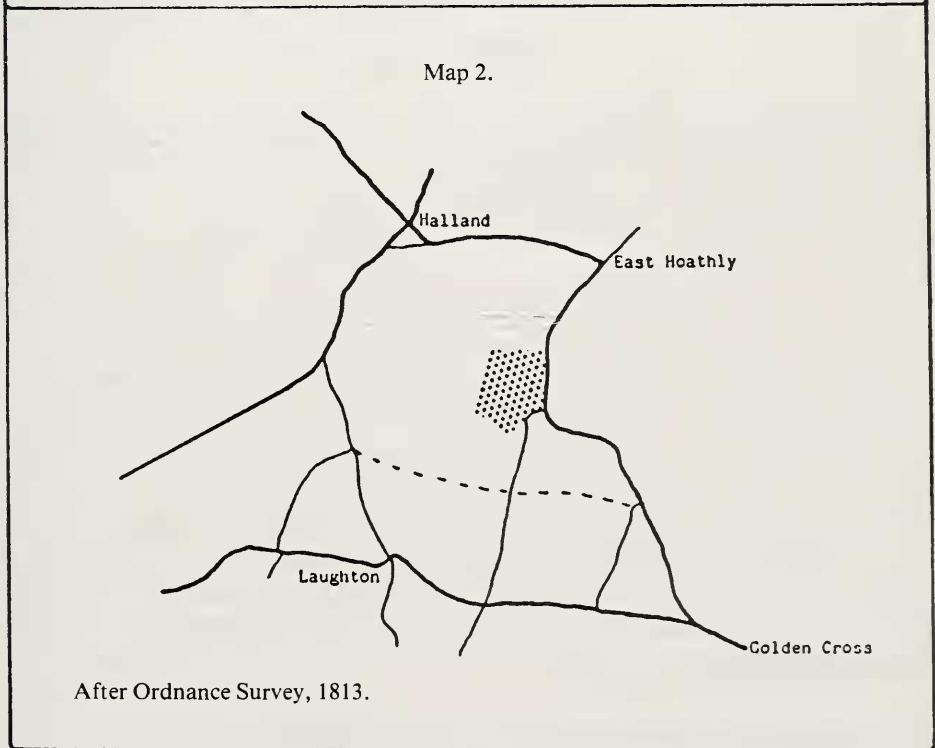
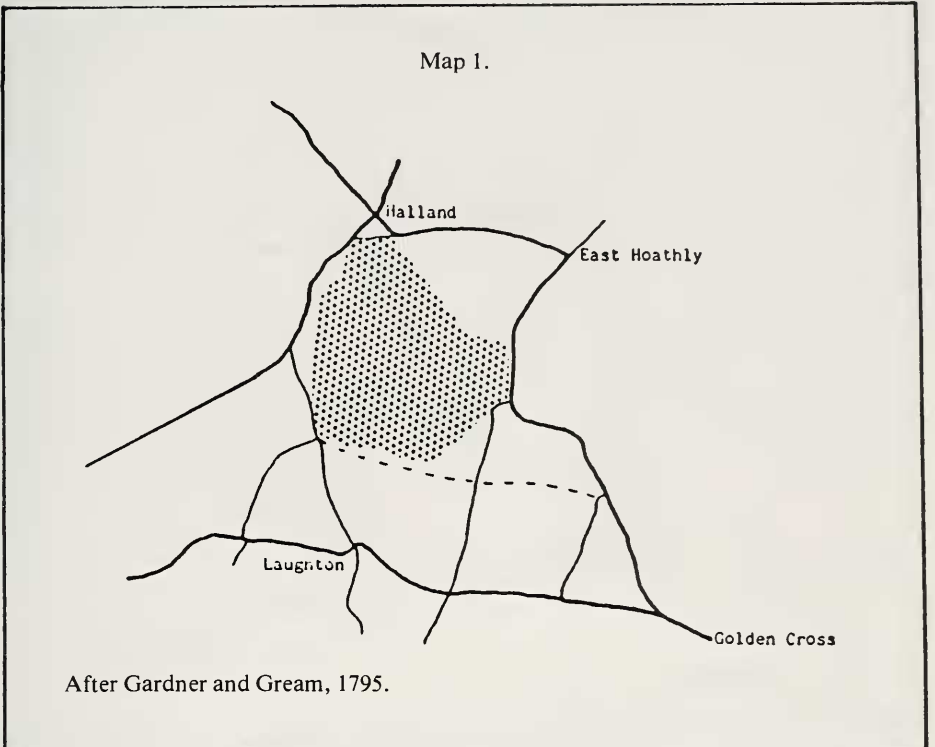


with timber of the finest growth, was divested of its sylvan pride" (Ellis, 1885) and "provided everlasting supplies of charcoal" (Pearson, 1931). In addition, iron clay was quarried, deer roamed the park, and for centuries bracken had been cut for livestock bedding. But when, by the first third of this century, most of these practises had fallen into disuse, scrub encroached on the remaining heath. "Where, as on many southern commons, both burning and grazing have ceased, the ingress of scrub woodland is rapid" (Edlin, 1956) and bracken, the foremost protagonist, ceased being gathered for bedding in most of Sussex in about the 1930s.


Although pictured flying in open meadows in Europe (Skou, 1986), before the Second World War in this country *immorata* was already confined to sunny glades containing grassy heath; the glades contained numerous low plants, low scrub, and were bounded by deciduous woodland. At the middle of this century the reserved area was bounded by dense thickets of blackthorn, hawthorn, brambles and gorse, on its southern and western edges, and oak and birch trees grew on the remaining aspects. Bracken increasingly became a problem, especially in the 1960s. During much of the following decade the reserve was, apart from a very few square feet, completely dominated by bracken — indeed, it was difficult to walk round the site.

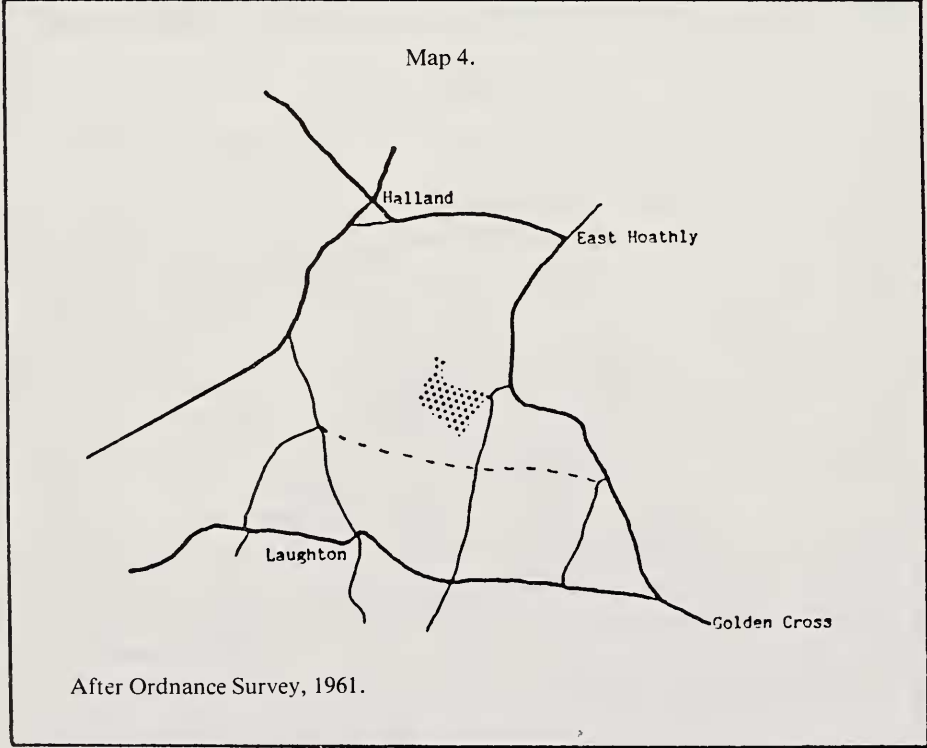
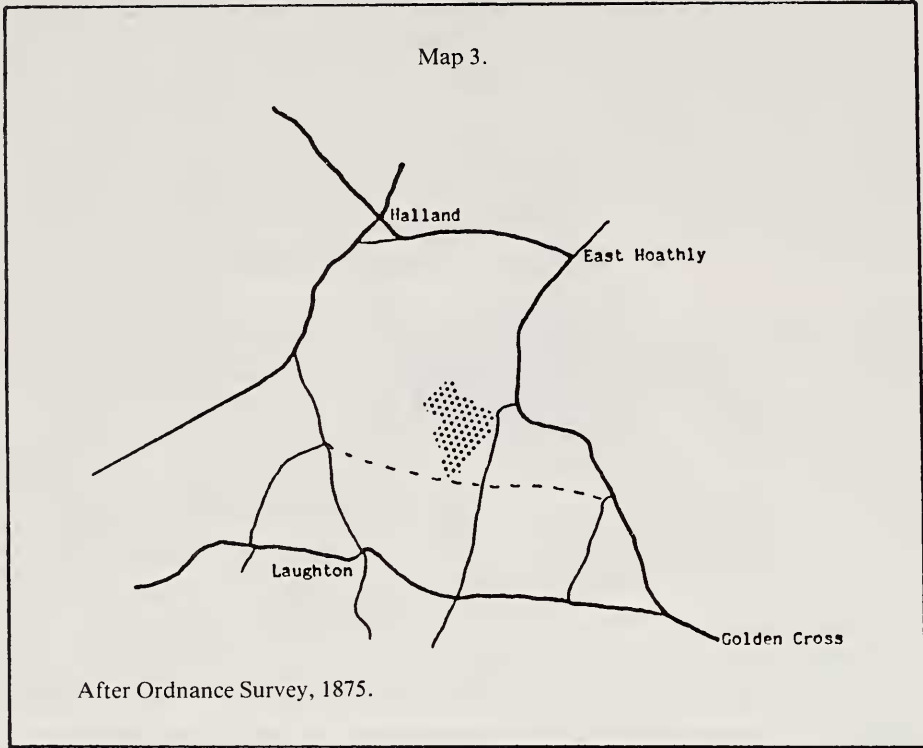
Despite the potency of this change in environment, even more serious events had been reducing the total numbers of *immorata* since about 1800. On a map of Sussex published in 1795 by William Gardner and Thomas Gream the heathland north of Laughton village stretched from near Halland cross-roads in the north to Laughton Common in the south (map 1), some 850 acres. Whilst this establishes the potential size of the colony at that time the total numbers of the moth in flight can only be imagined. But by the time the Ordnance Survey of the area was published in 1813 almost 90% of the heath had been brought under cultivation (map 2). In another survey published in 1875, just before the public discovery of the moth, little had changed as regards the area of suitable habitat available — although there had been a change in the location of the main heath site (map 3). A few more acres were lost to farming before the turn of the century and just after but the position remained stable until the Second World War (map 4). Officially, permission was needed to collect at Vert from early times, although few people bothered, and even as early as 1927 some effort was being made to exclude collectors from the main colony. In a letter from the estate foreman of the day, Alan Stewart, to A. E. Tonge, granting permission to collect moths in the wood, "the wired enclosure" was excluded. Traces of the barbed wire can still be seen today, buried in the trunks of a line of beech trees bounding the footpath separating Rowland Wood from the more southerly woods.

In 1945/6 almost the entire area was ploughed and much of the heather destroyed; shortly afterwards conifers were planted and a



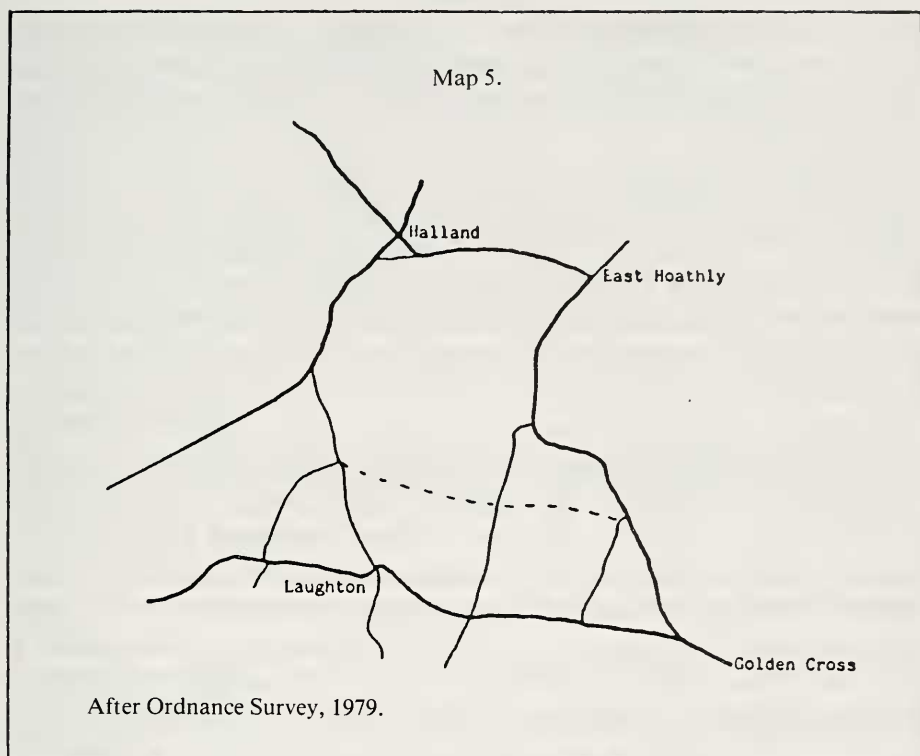
Scale ————— 1 mile

Heathland and Scrub 



Scale ————— 1 mile

Heathland and Scrub 



directional radio-beacon mast erected. This devastation provoked both public and private responses; during the middle years of this century, to his great credit, B. Embry of Uckfield tried privately to clear encroaching scrub and bracken at the Devil's Race. In 1951 the moth became protected by the Committee for the Preservation of British Insects, under the auspices of the Royal Entomological Society; a year earlier the Race had been mooted as an area of special scientific interest and it became scheduled in 1953 by the forerunners of the Nature Conservancy Council. In early 1957, on behalf of the aforementioned committee, N.D. Riley thought that a two acre reserve would be sufficiently large to ensure the species' survival and five years later the two foremost lepidopterists living in the county, A.J. Wightman and G.M. Haggett, became involved in practical and political attempts to conserve the insect. It was suggested that the Sussex Trust for Nature Conservation take over the Devil's Race and designate the two acres a nature reserve; this was soon achieved through the patronage of the land owner.

For many years, probably centuries, *immorata* had been restricted to the warmth of sheltered glades but in 1959 most of the overgrown reserve was opened to all four winds, and worse, when surrounding cover was felled and the land levelled by bull-dozer. The reserve suffered

much incidental damage. Visiting at the time, R. Fairclough searched for the moth and wrote that he was "horrified" by the scene and was "sure this is the end of it" (Fairclough, 1961) — and he was right, it was the *coup de grace*.

Excluding the reserved two acres, conifers were then planted throughout. In 1964, paying £250 for the privilege, the Trust was granted permission for a further three acres of adjoining conifer-planted land to be added to the reserve and the resultant total of around five acres has been held since (map 5). In the mid 1960s the Trust removed all the conifers and commenced scrub and bracken clearance operations. Reports of a fire on the site in about 1967 lie unconfirmed by residents.

For many years Vert Wood was owned by the Chichester Estate company, their agents being Strutt, Parker, Loft & Warner of Lewes. At the end of the Second World War the land was sold off in small plots for around £20 an acre — the Devil's Race area being bought by the Thorley family — and was after managed by the high profile firm of Fountain Forestry of Somerset until its recent resale. Most, but not all, concerned were sympathetic to the insects' conservation, although at a price, at a time when conservation was less fashionable. The Sussex Trust for Nature Conservation has spent much hard earned money on the site and its volunteers worked hard, unsuccessfully, to re-establish ancient heath to provide any surviving moths with a suitable environment. No doubt, to survive, *immorata* had always colonised freshly available heathy spots at Vert Wood, as older areas became shaded, but in the end there was just no suitable heath left. A few very small areas of a suitable character do still become apparent in the district from time to time but the herbicide "Roundup" has been extensively used since the early 1980s.

In summary, despite efforts by private individuals, leading lepidopterists, the county naturalists trust, the Committee for the Preservation of British Insects, and the Nature Conservancy Council, *immorata* became extinct through the loss of suitable habitat. It is clear that although heath had been lost to agriculture for many years, the critical act was the Second World War ploughing from which the insect never recovered. It may be that a more assertive stance by the Sussex Trust for Nature Conservation to gain better co-operation from the "foresters", using adverse publicity if necessary, could have saved *immorata*: we will never know. Arguably, the Lewes Wave could have been rescued from extinction until the 1950's but conservation efforts were too little, too late.

#### Acknowledgements

My thanks are due to Dr J.V. Banner, R. Fairclough, G.M. Haggett, the Lewes division of the Nature Conservancy Council, Mr J. Pratt of Decca Navigation, and Mr B. Skinner, for their information on *S. immorata* and its habitat.



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A LONG WAY FROM HOME.— It may be of interest to record that at 1350 hours on Thursday the 30th of June 1988, whilst *en route* from Fort Lauderdale, Florida, to Bermuda on board a 55 foot yacht, a fresh specimen of the American painted lady butterfly, *Cynthia virginienensis* Drury, was seen flying strongly around the boat. It rested for 2-3 minutes on a spinnaker pole on the deck before continuing to fly, settling briefly on other parts of the boat. Unfortunately none of the crew saw from which direction it arrived, nor whence it eventually departed. The precise location was 28 degrees 44.97 minutes North, 75 degrees 41.46 minutes West which is about 250 miles east of Cape Canaveral and 145 miles north east of the Abaco Islands. I do not know whether the species is resident on the Abaco Islands, the nearest land. It was a very hot day with hardly a breath of wind; what little breeze there was was coming from the Atlantic. W.J. TENNENT, 1 Middlewood Close, Fylingthorpe, Whitby, North Yorkshire.